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TECHICAL SPECIFICATION FOR  
LITHIUM MANGANESE DIOXIDE BATTERY

**CR-2032**

**FILE NO: DSE-CR-CR2032-V14A**

**EDITION : V14A**

**DATE : 2014/04/18**

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## 1. SCOPE

This specification shall be applied to MOTOMA industrial lithium manganese dioxide battery of CR2032. The all technical data and materials list are for the industrial purpose only

**BATTERYMODEL :** CR-2032-240mAh

### APPLICATION:

Electronic dictionary, Remote control, Toys, Horologe, Electronic scales, Electronic perpetual calendar, Electronic flash products etc.

## 2. CHARACTERISTICS

### 2.1 Nominal voltage 3V

2.2 Normal capacity: 240mAh (continuous discharge at 20°C under 15KΩ load to 2.0V cut-off voltage)

2.3 Open-circuit voltage: ≥3.20V

2.4 Instantaneous short-circuit current: ≥300mA

2.5 Discharge cut-off voltage: 2.0V (20°C)

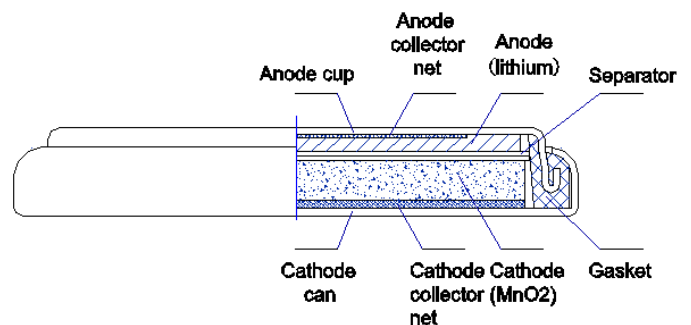
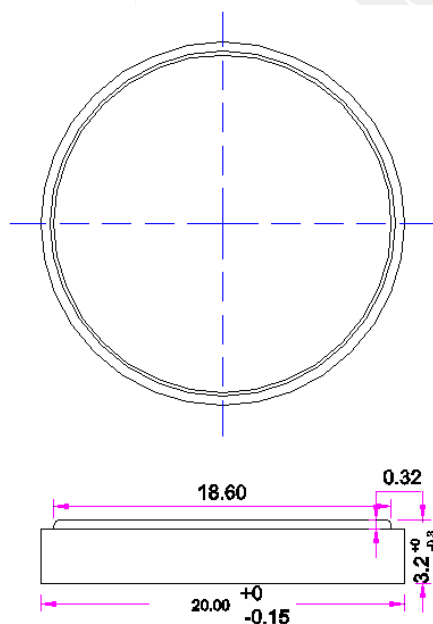
● 2.6 Operate temperature range: -20~+60°C

2.7 Storage temperature range: 0~+35°C

2.8 Storage relative humidity: 45~85%

2.9 Weight (approx): 3.0g

## 3.DIMENSION AND CUTAWAY VIEW



5, Gasket ; 6, Cathode (MnO<sub>2</sub>) ; 7, Cathode collector net ; 8, Cathode can ;  
1, Anode cup ; 2, Anode collector net ; 3, Anode (lithium metal) ; 4, Separator ;

**Cutaway View of Lithium Manganese Dioxide (Coin type)**

## **4. APPEARANCE PERFORMANCE**

### **4.1 TEST REQUIREMENTS**

Testing Conditions (unless otherwise specified):

- Temperature:  $+15\sim+25^{\circ}\text{C}$
- Relative Humidity:  $45\%\sim85\%$

### **4.2 TEST METHOD AND PERFORMANCE**

#### **4.2.1 APPEARANCE**

No deformation, dent, stain, leakage and camber which influence the value of the battery.

#### **4.2.2 CAPACITY**

After keeping the battery for 8hrs at  $20^{\circ}\text{C}$ , continuous discharge at  $20\pm5^{\circ}\text{C}$  and relative humidity at  $65\pm20\%$  under  $15\text{K}\Omega$  load to 2.0V cut-off voltage.

#### **4.2.3 OPEN-CIRCUIT VOLTAGE**

Using multimeter (accuracy $\geq 0.25\%$ ) internal resistance $\geq 1\text{M}\Omega$

#### **4.2.4 SHORT-CIRCUIT CURRENT (INSTANTANEOUS)**

The time of short-circuit should be less than 0.5 second and avoid repeated test within half an hour

#### **4.2.5 SELF-DISCHARGE**

The battery continuously discharged with  $15\text{K}\Omega$  load till 2.0V end-voltage after the storage at room temperature of 12 months. The capacity shall be  $\geq 200\text{mAh}$

#### **4.2.6 OVER DISCHARGE**

The battery shall not cause leakage when it is continuously discharged for 5 hours after it discharged with  $15\text{K}\Omega$  load to 2.0V end-voltage.

#### **4.2.7 STORAGE**

The battery stored under high temperature ( $45^{\circ}\text{C}$ ) for 30 days, the Leakage rate shall be less than 1%.

#### **4.2.8 VIBRATION**

The performance of battery shall keep stability when tested with the frequency form 10 to 15 times per minute. Keeps it running for an hour.

## **5. SUGGESTION & ADVICE**

- 5.1 Install batteries correctly.
- 5.2 Ensure the contact points to be clean and conductive.
- 5.3 Do not mix different types, different brands batteries to serve together.
- 5.4 Do not heat, recharge the batteries.
- 5.5 Do not dispose of the batteries in fire.
- 5.6 Keep away from the small children, if swallowed promptly see doctor.
- 5.7 Pay attention to the producing date.

5.8 Avoiding soldering directly to the battery.

